

Work Order ID 87032

July-10-12 8:23:16 AM

\*87032\*

Page 1

Item ID: D206-642-351

Accept

\*N9000040100\*

Setup Start

\*NS1\*

Revision ID:

Item Name: Replacement Skidtube

Stop

\*NS2\*

Start Date: 10/07/2012 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 23/07/2012 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals:

Process Plan: ML5

Date: 12/07/10

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

\*NR1\*

Stop

\*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4361	A								
IIN-D206-642	O								
100		0.00							
*100*	DOCUMENT CONTROL								
DC		0.00							
Document Control	Memo								
	Photocopy bluefile and create labels per PPP D206-642-351								
	CHG001								

N/A *[Signature]*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 87032

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**\*87032\***

Page 2

Item ID: D206-642-351

Accept

**\*N9000040100\***

Setup Start

**\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop

**\*NS2\***

Start Date: 10/07/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 23/07/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

**\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

110

0.00

**\*110\***

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Deburr Fwd edge of tube

2-Remove ridge on inside of Fwd edge of tubeas per Dwg D4361

3-Weld Fwd Cap as per Dwg D4361 Use aluminum rod. Grind D2647 to fit as required.

A/RAluminum Rod

4-Grind weld flush to cap on top surface only.

5-Cut aft end to lenght as per dwg D4361

6-Drill pilot holes using drill Jig DT8168A and DT8168B. Most Fwd wearplate hole to be laid out manually.

8-Open Aft Cap Hole using # Drill Bit

9-Open holes for Tow Ring to Ø0.625" as per Dwg D4361, D4361-041 Drilling Detail

10-Remove inner indexing ridge on aft end of skidtubeas per Dwg D4361

11-Deburr and Blow out all chips form inside the tube

SAD 12-07-10 ©

M120164/MR2130 3 BE 12/07/10

SAD 12-07-10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**\*87032\***

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July-10-12 8:23:16 AM

Item ID: D206-642-351

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 10/07/2012 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 23/07/2012 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
115	QC5- Inspect part completeness to step on W/O	0.00							
<b>*115*</b>									
QC	Memo	0.00							
Quality Control									
120	Chemical Conversion Coat per QSI005 4.1	0.00							
<b>*120*</b>									
HandFinish	Memo	0.00							
Hand Finishing									
125	QC3- Inspect Part Finish	0.00							
<b>*125*</b>									
QC	Memo	0.00							
Quality Control									

5/2/11

1 7/6 12-7-11

① 3AD 12-7-12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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**NOTE:** Date & initial all entries

# Work Order ID 87032

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July-10-12 8:23:16 AM

Item ID: D206-642-351

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Item Name: Replacement Skidtube

Stop \*NS2\*

Start Date: 10/07/2012 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 23/07/2012 Req'd Qty: 1.00 \*1\*

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*  
Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130

0.00

\*130\*

Skidtubes

Skidtubes

Memo

0.00

1-Open holes to finished size as per Dwg D4361, D4361-041 Drilling Detail

2-Countersink crossbolt spacer holes as per Dwg D4361

3-Deburr. Blow out chips. Grind alodine off around crossbolt spacer.

4-Bond D2654-5 web in place as per QSI 015, Ensure holes line up. Allow 12 Hrs. cure time

Start Date: 12-7-12 Time: 9:20  
Finish Date: 12-07-12 Time: 10:00

A/R Sikaflex-291: 11/21/09  
Sikaflex expiry date: 12-4-12

140

QC5- Inspect part completeness to step on W/O ~0.00

\*140\*

QC

Memo

0.00

Quality Control

1 0 CA 12-7-12

1 0 JE 12-07-12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Item ID: D206-642-351

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 10/07/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 23/07/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

150

0.00

**\*150\***

Skidtubes

Skidtubes

Memo

0.00

1-Prep per QSI 005 and Insert cross bolt spacers D2649. Weld as per QSI 004 and Dwg D4361. Remember to back drill each hole to 0.25" before welding the other side. Use aluminum rod.  
A/RAluminum Rod *M120164* *BE 12/6/16*

2-Grind welds flush as per Dwg D4361. *→ CE 12-7-16*

3-Counterbore 5/16" x 0.750" deep as per Dwg D4361. Deburr

4- Install nut plate as per dwg

170

QC10- Inspect visual per QSI004- ground welds

0.00

**\*170\***

QC

Memo

0.00

Quality Control

*(DAS 16 9-89 12/6/16)*

*12-7-18*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 87032

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July-10-12 8:23:16 AM

Item ID: D206-642-351 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Replacement Skidtube  
 Start Date: 10/07/2012 Start Qty: 1.00 \*1\* Cust Item ID:  
 Required Date: 23/07/2012 Req'd Qty: 1.00 \*1\* Customer:  
 Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start \*NR1\*  
 QC: Date: SPC (Y/N): Date: Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 *180* QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00 0.00							
190 *190* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3  Memo Brush alodine tube on crossbolt spacer area, do not acid etch, do not dip tube in tank.	0.00 0.00							
200 *200* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum  Memo START TIME: 8:15 OVEN TEMPERATURE: 320 F FINISH TIME: 8:45	0.00							

DAS 15 8-30 12/19/18

1 76 12-7-19

IX 12/07/19

M121841

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 87032

**\*87032\***

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July-10-12 8:23:16 AM

Item ID: D206-642-351

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 10/07/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 23/07/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***  
Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject / Number	Insp. Stamp
210	QC3- Inspect Part Finish	0.00							
<b>*210*</b>									
QC	Memo	0.00							
Quality Control									
220		0.00							
<b>*220*</b>	HandFinishing								
HandFinish	Memo	0.00							
Hand Finishing	<ul style="list-style-type: none"> <li>1-Install wearplates as per dwg D4361.</li> <li>2-Install O-Rings D2651-3 on plugs D2651-1 with Petroleum Jelly and install plugs as per Dwg D4361. Clean excess adhesive</li> <li>3-Install MS27039-4-06 Screw</li> <li>4-Inspect for foreign object per QSI 024</li> <li>5-Install D2646 Aft Cap and seal with SikaflexClean excess adhesive A/RSikaflex-291 <u>11121136</u> Sikaflex expiry date: <u>11/03</u></li> <li>6-Wing Walk as per Dwg D4361-041 and QSI 005 4.4 Batch: <u>1113150</u></li> </ul>								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

# Work Order ID 87032

July-10-12 8:23:16 AM

**\*87032\***

Page 8

Item ID: D206-642-351

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 10/07/2012 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 23/07/2012 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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230

QC3- Inspect Part Finish

0.00

**\*230\***

QC

Memo

0.00

Quality Control

240

QC5- Inspect part completeness to step on W/O

0.00

**\*240\***

QC

Memo

0.00

Quality Control

250

Packaging

0.00

**\*250\***

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206-642-351

Location:

PPP Rev: **PPP 86993**

**DAS 16** 8/7/12

**DAS 16** 8/7/12

**(C)**

**C 12/7/12 (1)**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



Work Order ID 87032

\*87032\*

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July-10-12 8:23:16 AM

Item ID: D206-642-351

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Item Name: Replacement Skidtube

Stop \*NS2\*

Start Date: 10/07/2012 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 23/07/2012 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start \*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

260

QC21- Final Inspection - Work Order Release

0.00

\*260\*

QC

Memo

0.00

Quality Control

12/7/23  
MR  
12-07-20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

# Picklist Print

July-10-12 8:23:20 AM

Page 1

Work Order ID: 87032

\*87032\*

Parent Item: D206-642-351

\*D206-642-351\*

Parent Item Name: Replacement Skidtube

Start Date: 10/07/2012

Required Date: 23/07/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A NEW ISSUE 12-07-09 JLM VERIFIED BY:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2600-1-160

Manufactured

No

Each

55.0000

\*\*

1  
SAD 12-07-10

~~\*D2600-1-160\*~~

Extrusion Round 3" 206

D2620

W

Location

Loc Qty

Loc Code

LG

55

43969

2

59875

1

68284

4

76913

48

86331

0

D2654-5

Manufactured

No

Each

7.0000

\*\*

1

CF 12-7-12

\*D2654-5\*

Web

Location

Loc Qty

Loc Code

LG

7

82128

1

85209

6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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July-10-12 8:23:21 AM

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Work Order ID: 87032

**\*87032\***

Parent Item: D206-642-351

**\*D206-642-351\***

Parent Item Name: Replacement Skidtube

Start Date: 10/07/2012

Required Date: 23/07/2012

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

Each

81.0000

**\*D2646\***

Aft Cap

\*\*

1  
HL 11/07/12

Location

Loc Qty

Loc Code

FP002

81

62678

5

68280

5

70945

1

71070

2

73294

1

73825

2

79562

4

81974

28

85443

33

VI

D2647

Manufactured No

Each

65.0000

**\*D2647\***

Cap

\*\*

1

BE 12/12/10

Location

Loc Qty

Loc Code

LG002

65

75482

3

79563

62

1

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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July-10-12 8:23:21 AM

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Work Order ID: 87032

\*87032\*

Parent Item: D206-642-351

\*D206-642-351\*

Parent Item Name: Replacement Skidtube

Start Date: 10/07/2012

Required Date: 23/07/2012

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

Each

351.0000

23

\*D2649\*

\*\*

Cross Bolt Spacer

DE 12-07-16

Location

Loc Qty

Loc Code

LG

208

77574

2

79502

8

79503

5

79564

4

79565

7

85586

182

23

LG001

143

65317

1

68224

2

68507

11

71355

2

72704

2

72841

11

73390

8

73857

21

73858

53

73859

4

73860

4

78020

6

78583

2

79566

16

July-10-12 8:23:21 AM

Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

July-10-12 8:23:21 AM

Page 4

Work Order ID: 87032

\*87032\*

Parent Item: D206-642-351

\*D206-642-351\*

Parent Item Name: Replacement Skidtube

Start Date: 10/07/2012

Required Date: 23/07/2012

Start Qty: 1.00

Required Qty: 1.00

D2651-1

Manufactured No

Each

474.0000

4

\*D2651-1\*

Plug

\*\*

HL 10/07/12

## Location

## Loc Qty

## Loc Code

FP	200	B35456	✓✓
FP001	425		
57869	1		
66445	10		
69018	2		
70827	2		
70839	8		
71037	8		
77559	30		
78584	18		
79234	46		
FP002	203		
85456	203		
FP-A	-354		
77559	1		
78124	5		
81954	36		
82573	104		

D2651-3

Manufactured No

Each

1,016.000

4

\*D2651-3\*

O-Ring

\*\*

HL 12/07/12

## Location

## Loc Qty

## Loc Code

FP001	16		
61962	12		
73828	4		
FP-A	1000		
78126	1000		✓✓

July-10-12 8:23:21 AM

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Page 4

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Picklist Print

July-10-12 8:23:21 AM

Page 5

Work Order ID: 87032

**\*87032\***

Parent Item: D206-642-351

**\*D206-642-351\***

Parent Item Name: Replacement Skidtube

Start Date: 10/07/2012

Required Date: 23/07/2012

Start Qty: 1.00

Required Qty: 1.00

D2680-041

Manufactured No

Each

74.0000

**\*D2680-041\***

Nut Plate

\*\*

1 *DP 12-7-18*

Location

Loc Qty

Loc Code

ST013

74

78016

74

Each

332.0000

\*\*

18 *sh n/oz/19*

D3873-1

Manufactured No

**\*D3873-1\***

Bushing

Location

Loc Qty

Loc Code

ST057

6

79561

6

ST067

326

64760

1

68247

4

73829

19

73830

2

76791

280

79560

20

*x 18*

D4364-041

Manufactured No

Each

0.0000

**\*D4364-041\***

Fwd Wearplate Assembly

\*\*

1 *1387540 (x1) M u/oz/20*

D4364-043

Manufactured No

Each

0.0000

**\*D4364-043\***

Aft Wearplate Assembly

\*\*

1 *1387806 (x1) M u/oz/20*

July-10-12 8:23:21 AM

Shop Packet Print

Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Picklist Print

July-10-12 8:23:21 AM

Page 6

Work Order ID: 87032

\*87032\*

Parent Item: D206-642-351

\*D206-642-351\*

Parent Item Name: Replacement Skidtube

Start Date: 10/07/2012

Required Date: 23/07/2012

Start Qty: 1.00

Required Qty: 1.00

AN3-36A Purchased No

Each 222.0000

9

\*AN3-36A\*

\*\*

Bolt

HL 11/07/12

## Location

## Loc Qty

## Loc Code

ST353

222

15072

70

15924

152

vg

NAS1149C0332R

Purchased

No

Each

9,080.000

9

\*NAS1149C0332R\*

\*\*

Washer

HL 11/07/12

## Location

## Loc Qty

## Loc Code

297

9058

122063

9058

vg

ST297

22

121509

22

MS21042-3

Purchased

No

Each

0.0000

9

\*MS21042-3\*

\*\*

USE MS21042L3

11119017

(vg) HL 11/07/12

NAS1149D0332J

Purchased

No

Each

1,517.000

2

\*NAS1149D0332J\*

\*\*

Washer

HL 11/07/12

## Location

## Loc Qty

## Loc Code

ST297

930

121708

930

ST298

587

105793

12

110985

4

117087

89

119042

16

119717

103

120644

7

121011

356

12

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Page 6

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Picklist Print

July-10-12 8:23:21 AM

Page 7

Work Order ID: 87032

Parent Item: D206-642-351

Parent Item Name: Replacement Skidtube

\*87032\*

\*D206-642-351\*

Start Date: 10/07/2012

Required Date: 23/07/2012

Start Qty: 1.00

Required Qty: 1.00

CCR264SS3-3

Purchased

No

Each

320.0000

2

\*CCR264SS3-3\*

Cherry Rivet

\*\*

DD 12-7-18

Location

Loc Qty

Loc Code

ST331

320

113973

2

117849

77

119017

241

CR3212-4-3

Purchased

No

Each

0.0000

2

\*CR3212-4-3\*

Cherry Rivet

\*\*

DD 12-7-18

119017

MS27039-1-08

Purchased

No

Each

1,168.000

2

\*MS27039-1-08\*

Screw

\*\*

HL 11/07/19

Location

Loc Qty

Loc Code

ST291

1168

117423

81

119075

1

120308

166

121011

43

121243

500

121708

377

MS27039-4-06

Purchased

No

Each

114.0000

1

\*MS27039-4-06\*

Screw

\*\*

HL 11/07/19

Location

Loc Qty

Loc Code

ST292

114

119075

114

Y1

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Page 7

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
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# Picklist Print

July-10-12 8:23:21 AM

Page 8

Work Order ID: 87032

Parent Item: D206-642-351

Parent Item Name: Replacement Skidtube

\*87032\*

\*D206-642-351\*

Start Date: 10/07/2012

Required Date: 23/07/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0463J

Purchased

No

Each

1,946.000

1

\*NAS1149D0463.J\*

Washer

\*\*

25/07/19

## Location

## Loc Qty

## Loc Code

ST298

89

M122441

X1

104746

3

116805

0

119097

27

121255

48

121708

11

ST299

1854

121912

1854

ST351

3

107321

3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

QTY -041	QTY -043	PART NUMBER	DESCRIPTION
X		D4361-041	SKIDTUBE ASSY
	X	D4361-043	SKIDTUBE ASSY
1	1	D2600-1-160	EXTRUSION
1		D2654-5	WEB
	1	D2654-7	WEB
1	1	D2646	AFT CAP
1	1	D2647	CAP
23	26	D2649	CROSS BOLT SPACER
4	8	D2651-1	PLUG
4	8	D2651-3	O-RING
1	1	D2680-041	NUT PLATE
18	20	D3873-1	BUSHING
1		D4364-041	FWD WEARPLATE ASSY
1		D4364-043	AFT WEARPLATE ASSY
	1	D4366-041	FWD WEARPLATE ASSY
	1	D4366-043	AFT WEARPLATE ASSY
9	10	AN3-36A	BOLT
9	10	NAS1149C0332R	WASHER (OR AN960C10L)
9	10	MS21042-3	NUT
2	2	NAS1149D0332J	WASHER (OR AN960JD10L)
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	MS27039-1-08	SCREW
1	1	MS27039-4-06	SCREW
1	1	NAS1149D0463J	WASHER (OR AN960JD416)

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 87032 *MLJ*  
*12/07/10*

**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2654-5/-7 WEB  
-POWDER COAT WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
-BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D4361-041 = 37.5 LBS  
D4361-043 = 44.3 LBS
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015
- 11) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)

**RELEASED**  
2011-09-12 *MLJ*

A	NEW ISSUE	SC	11.05.05
REV.	DESCRIPTION	BY	DATE
DESIGN	SC	<b>DART AEROSPACE USA, INC</b>	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	<i>JP</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>JP</i>	D4361	SHEET 1 OF 4
APPROVED	<i>JP</i>	TITLE	SCALE
DE APPR.	<i>JP</i>	206L/407 SKIDTUBE ASSEMBLIES	NTS
DATE	11.05.05	COPYRIGHT © 2011 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

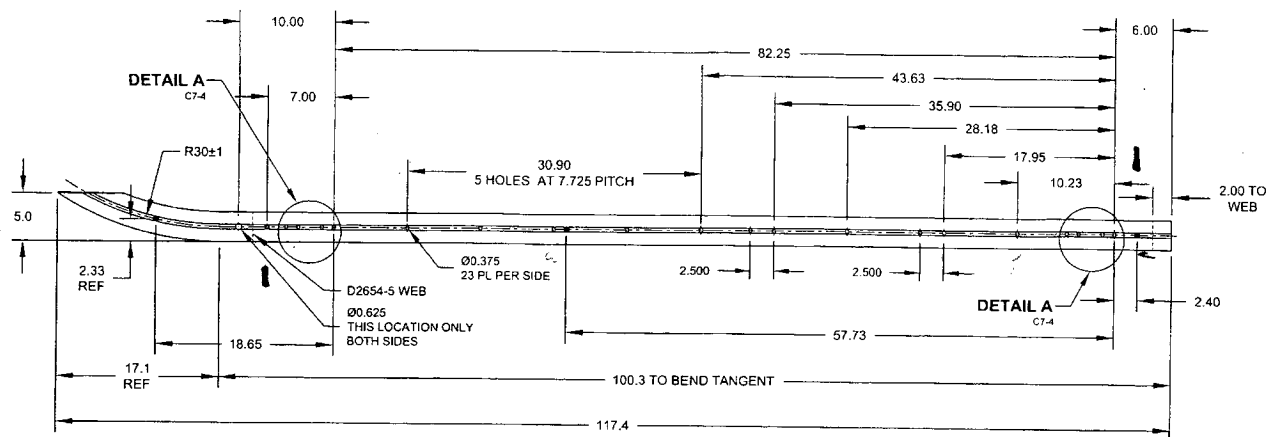
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng/ Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

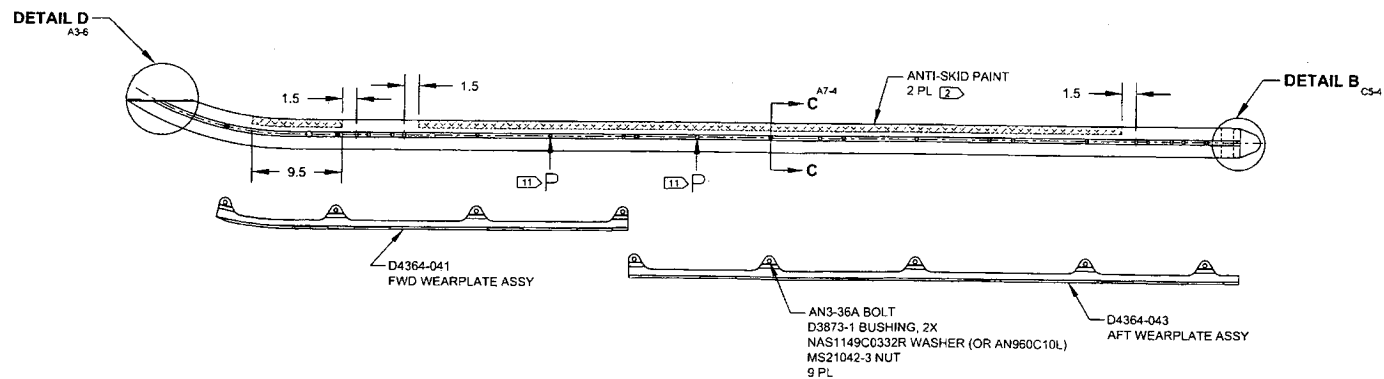
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



D4361-041 BENDING/DRILLING DETAIL



D4361-041 ASSEMBLY/FINISHING DETAIL

DESIGN	SC	DART AEROSPACE USA, INC	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	97	DRAWING NO.	REV. A
MFG. APPR.	88	D4361	SHEET 2 OF 4
APPROVED	10	TITLE	SCALE
DE APPR.	11	206L/407 SKIDTUBE ASSEMBLIES	NTS
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2011-09-12

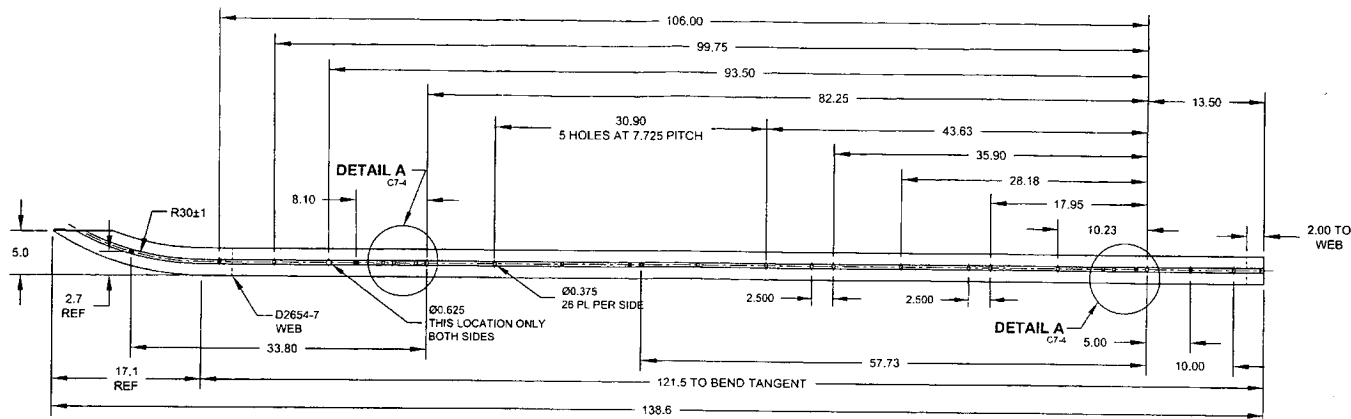
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

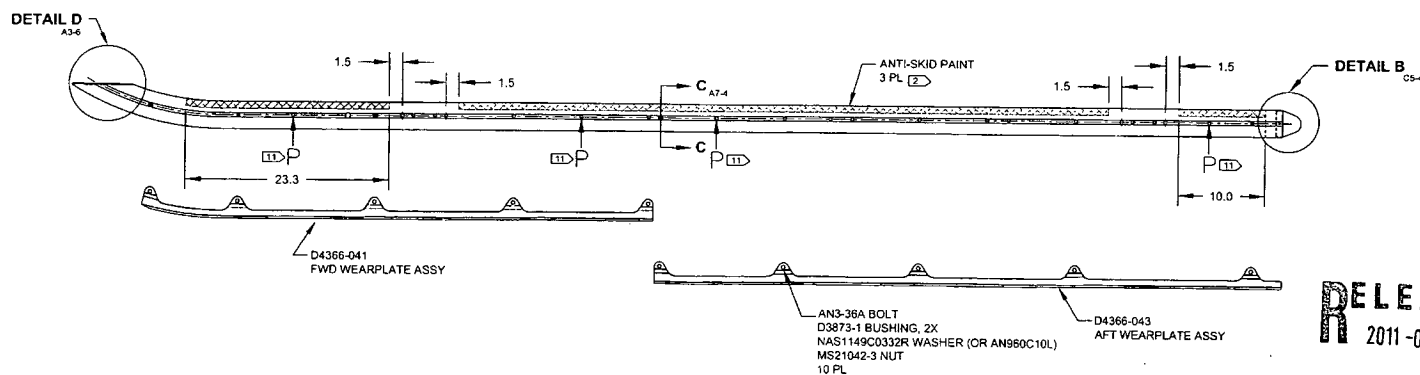
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**NOTE:** Date & initial all entries



D4361-043 BENDING/DRILL DETAIL



D4361-043 ASSEMBLY/FINISHING DETAIL

DESIGN	SC	<b>DART AEROSPACE USA, INC</b>	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4361	SHEET 3 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	206L/407 SKIDTUBE ASSEMBLIES	NTS
DATE	11.05.05	<small>COPYRIGHT © 2011 BY DART AEROSPACE USA, INC          THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS          NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT          WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

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2011-09-12  
*[Signature]*

27032

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

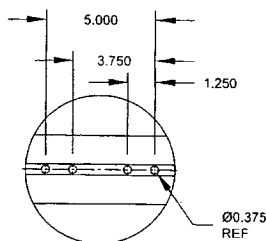
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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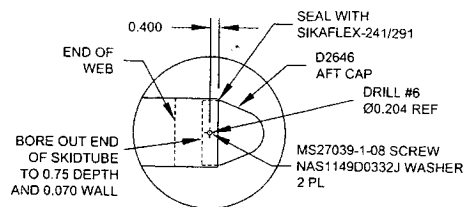
**NOTE:** Date & initial all entries





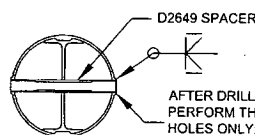
**DETAIL A**

C3-2  
D7-2  
C3-3  
D6-3



**DETAIL B**

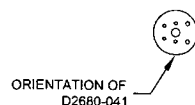
B2-2  
B1-3



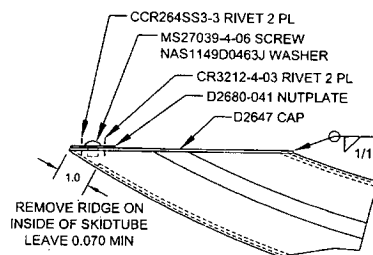
AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.375  
HOLES ONLY:  
1. CHAMFER HOLE 0.030 X 45°  
2. INSERT D2649 SPACER  
3. WELD INTO PLACE AND GRIND FLUSH  
4. CBORE TO Ø0.313 X 0.75 DP

**SECTION C-C**  
FOR Ø0.375 HOLES  
ONLY

B4-2  
B5-3



ORIENTATION OF  
D2680-041



**DETAIL D**

B7-2  
B7-3

**DETAIL D NOTES:**

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D2647 (TRIM AS NECESSARY)
4. WELD D2647 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D2680-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D2680-041 PRIOR TO FINISH

**RELEASED**  
2011-09-12

DESIGN	SC	<b>DART AEROSPACE USA, INC</b>	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4361	SHEET 4 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	206L/407 SKIDTUBE ASSEMBLIES	NTS
DATE	11.05.05	<small>COPYRIGHT © 2011 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO

NO. 297

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job #: 80951  
Part #: A206-B42-151  
Description: Skid tube  
Welding Process: Tig ☒ Mig ☐  
Base material: Alum  
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Incomplete Penetration:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Incomplete Fusion:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Cracks:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Overlap (cold lap)	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Undercut:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Pin holes:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Porosity (surface):	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Coloration:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Burn through:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>

Qualifier David Rand Date of Test Coupon 12.06.13

Welder Barclay Elliott Date of Test Coupon 12.06.13

The above named individual is qualified in accordance with AWS D17.1.2001 to weld